

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

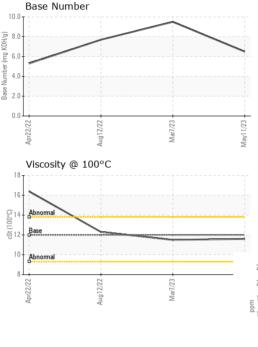
Fluid Condition

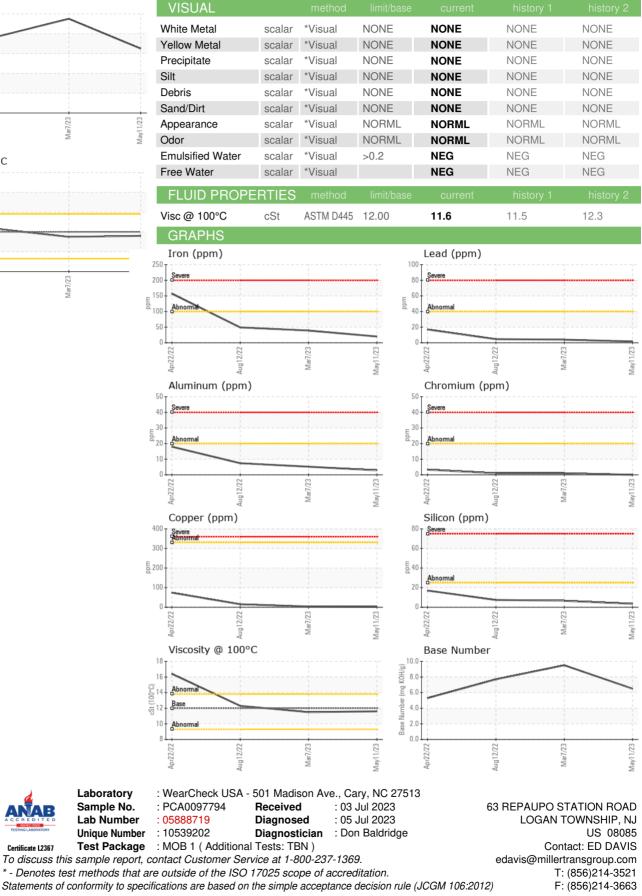
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0097794	PCA0094512	PCA0076064
Sample Date		Client Info		11 May 2023	07 Mar 2023	12 Aug 2022
Machine Age	mls	Client Info		126123	120501	96052
Oil Age	mls	Client Info		5622	10367	63684
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	0.0	NEG
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	20	39	49
Chromium	ppm	ASTM D5185m	>20	0	1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	5	7
Lead	ppm	ASTM D5185m	>40	2	4	5
Copper	ppm	ASTM D5185m	>330	2	4	15
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history 1	history 2
	ppm	method ASTM D5185m	limit/base	current 10	history 1 7	history 2 8
	ppm ppm					
Boron Barium		ASTM D5185m	2	10	7	8
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	2 0 50	10 2	7 0	8 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	10 2 73	7 0 75	8 0 69
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	10 2 73 <1	7 0 75 1	8 0 69 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	10 2 73 <1 822	7 0 75 1 872	8 0 69 <1 735
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	10 2 73 <1 822 1170	7 0 75 1 872 1256	8 0 69 <1 735 1391
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	10 2 73 <1 822 1170 1029	7 0 75 1 872 1256 1006	8 0 69 <1 735 1391 1009
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	10 2 73 <1 822 1170 1029 1184	7 0 75 1 872 1256 1006 1263	8 0 69 <1 735 1391 1009 1213
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	10 2 73 <1 822 1170 1029 1184 3280	7 0 75 1 872 1256 1006 1263 3048	8 0 69 <1 735 1391 1009 1213 3448
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	10 2 73 <1 822 1170 1029 1184 3280 current	7 0 75 1 872 1256 1006 1263 3048 history 1	8 0 69 <1 735 1391 1009 1213 3448 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 950 1050 995 1180 2600	10 2 73 <1 822 1170 1029 1184 3280 current 4	7 0 75 1 872 1256 1006 1263 3048 history 1 7	8 0 69 <1 735 1391 1009 1213 3448 history 2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	10 2 73 <1 822 1170 1029 1184 3280 current 4 58	7 0 75 1 872 1256 1006 1263 3048 history 1 7 102	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	10 2 73 <1 822 1170 1029 1184 3280 current 4 58 23	7 0 75 1 872 1256 1006 1263 3048 history 1 7 7 102 34	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63 27
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	10 2 73 <1 822 1170 1029 1184 3280 current 4 58 23 current	7 0 75 1 872 1256 1006 1263 3048 history 1 7 102 34 history 1	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63 27 kistory 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	10 2 73 <1 822 1170 1029 1184 3280 current 4 58 23 current 1.3	7 0 75 1 872 1256 1006 1263 3048 history 1 7 102 34 history 1 1.8	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63 27 history 2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	10 2 73 <1 822 1170 1029 1184 3280 current 4 58 23 current 1.3 14.1	7 0 75 1 872 1256 1006 1263 3048 history 1 7 102 34 history 1 1.8 11.7	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63 27 63 27 history 2 1 9.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	10 2 73 <1 822 1170 1029 1184 3280 current 4 58 23 current 1.3 14.1 29.4	7 0 75 1 872 1256 1006 1263 3048 history 1 7 102 34 history 1 1.8 11.7 22.7	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63 27 history 2 1 9.4 17.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 20 20 20 20 20	10 2 73 <1 822 1170 1029 1184 3280 Current 4 58 23 Current 1.3 14.1 29.4 Current	7 0 75 1 872 1256 1006 1263 3048 history 1 7 102 34 history 1 1.8 11.7 22.7 history 1	8 0 69 <1 735 1391 1009 1213 3448 history 2 7 63 27 63 27 history 2 1 9.4 17.9 history 2



OIL ANALYSIS REPORT





Certificate L2367

Contact/Location: ED DAVIS - MILLOG